

With respect to claims 1-5, 8, 11-13, 14, 17, 20, and 21, the Examiner, based on the disclosure in Killion that second order directional microphones are less sensitive than first or omni-directional microphones at frequencies below 2 KHz, has concluded that it would have been obvious to one of ordinary skill in the art to modify the second order microphone system of Allen by changing the electrical time delays of the first order elements to have a delay ratio greater than one. While Applicant does not disagree that second order directional microphones are less sensitive than first order microphones at lower frequencies, Applicant disagrees that there is any suggestion in Killion that the delay ratio (DR) of the first order microphones of Allen should be greater than one or that the first-order microphones have no nulls.

That is, the Examiner has failed to articulate why one of ordinary skill in the art would conclude that the DR of the first order microphones of Allen should be increased to greater than one or that the first order microphones of Allen should be modified to be without nulls, merely based on a disclosure that higher order microphones are less sensitive than lower order microphones at lower frequencies. In fact, Applicant is not aware of any relationship between frequency response and DR with respect to the claimed invention. Such a teaching to increase the DR of the first order microphones in a higher order microphone system can only come from the description of the present invention, which the Examiner is forbidden from using as a basis for rejection of the claims. If the Examiner insists on maintaining this rejection, he is requested to specifically point out where in the prior art there is an express, or even an inherent, teaching to increase the DR of first order microphones in a higher order microphone system.

With respect to claims 28, 29, 31, and 35, the Examiner has effectively taken official notice that it would have been obvious to use a test sound to match microphone elements. However, independent claim 28 requires more than this—that is, it requires that the test sound

come preferentially from the back direction. As set forth in the specification, it is indeed obvious to either provide a test signal that is omnidirectional (coming from all directions) or a test signal that preferentially comes from the front direction to match microphone elements (see page 13, lines 1-3). However, it is not obvious to provide a test signal that preferentially comes from the back direction. If the Examiner insists on maintaining this rejection, he is requested to point to prior art that specifically teaches that microphone elements can be matched based on the use of a test signal that preferentially comes from the back direction.

With respect to claims 6-7, 15, 16, 22-24, 27, and 20, the Examiner states that one of ordinary skill in the art would have realized the claimed delay ratio range without undue experimentation in the pursuit of an optical microphone system. However, without knowledge of the benefits of increasing the DR of the first order microphone elements in a higher order microphone system, one of ordinary skill in the art would not have appreciated that claimed delay ratio range.

As such, Applicants believe that claims 1-8, 11-17, 20-24, 27-31, and 35 are not obvious over the combination of Allen and Killion, and as such, respectfully request withdrawal of the rejections of these claims.

Allen, Killion, and Thompson

Claims 9, 10, 18, 19, 25, 26, and 32-34 stand rejected under 35 U.S.C. §103(a) as being obvious over Allen, in view of Killion, in further view of U.S. Patent No. 6,654,468 (“Thompson”). Without acquiescing that Killion and Thompson are §102(e) prior art references, and without prejudice to antedate these references should it become necessary, Applicant respectfully traverses this rejection, since none of Allen, Killion, or Thompson, alone or in

combination, discloses, teaches or suggests the combination of elements required by these claims.

In particular, these references do not disclose, teach or suggest that the DR of the first order microphone elements in a higher order microphone system should be increased to above one or that the first order microphone elements should have no nulls, as required by independent claims 1, 14, or 22. These references also do not disclose that two microphone elements be matched based on the use of a test signal that preferentially comes from the back, as required by independent claim 28. As such, Applicant submits that claims 9, 10, 18, 19, 25, 26, and 32-34, which depend from independent claims 1, 14, 22, and 28, are not obvious over the combination of Allen, Killion, and Thompson, and as such, respectfully request withdrawal of the rejections of these claims.

Conclusion

Based on the foregoing, all claims are now allowable and a Notice of Allowance is respectfully requested. If the Examiner has any questions or comments regarding this amendment, the Examiner is respectfully requested to contact the undersigned at (714) 830-0606.

Respectfully submitted,

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